

Application No. 10/031,268  
Reply to Office Action of April 6, 2006

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**Amendments to and Listing of the Claims:**

Please cancel claims 53-55, 58-99, 112-125, and 141-145, amend claims 1, 8, 40, 100-111, and 126, and add new claims 146-197 as follows:

1. (currently amended) An advertisement management system for managing insertion of advertisements in ~~video~~ program streams, the system comprising:

an avail opportunities module for recognizing one or more avails within the ~~video~~ program streams available for advertisements and creating an avail characterization for each avail of the one or more avails;

an ad characterization module that creates an ad characterization for ~~characterizing the advertisements; and~~

a correlation module for matching at least one of the advertisements to each of the one or more avails prior to transmitting the program streams to subscribers, wherein the matching is based at least partially on a correlation of the avail characterizations and the ad characterizations; and determining a match between an avail and an advertisement, wherein the match is determined at least in part by correlating available subscriber characteristics with the advertisement characteristics.

an ad insertion module for inserting the matched advertisements into the program streams, wherein the bandwidths of the advertisements and the program streams are synchronized during the insertion.

2. (original) The system of claim 1, wherein the avail opportunities module further comprises an avail characterization submodule that lists and organizes the avails.

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3. (original) The system of claim 2, wherein the avail characterization submodule is configured to receive data from one or more content related databases.
4. (original) The system of claim 2, wherein the avail characterization submodule has an interface that permits entry of data related to avails by operators or video programming managers.
5. (previously presented) The system of claim 4, wherein the data entered by operators or video programming managers is used to form one or more avail characterization vectors.
6. (original) The system of claim 4, wherein the data is entered in a plurality of categories based on demographics factors, socio-economic factors or consumption factors.
7. (original) The system of claim 1, wherein the ad characterization module comprises an advertiser interface that permits entry of advertisement related data.
8. (currently amended) The system of claim 7, wherein the advertiser interface is based on a graphical user ~~inteface~~ interface (GUI).
9. (original) The system of claim 8, wherein the advertisement related data is entered manually by advertisers and other sources.

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10. (original) The system of claim 8, wherein the advertisement related data is imported from a file.

11. (original) The system of claim 7, wherein the advertisement related data is used to characterize the advertisements.

12. (previously presented) The system of claim 7, wherein the advertisement related data is used to form one or more ad characterization vectors.

13. (previously presented) The system of claim 7, wherein the advertisement related data is categorized in a plurality of categories based on demographics factors, socio-economic factors or consumption factors.

14. (original) The system of claim 13, wherein a deterministic value is assigned to each category.

15. (original) The system of claim 13, wherein a probabilistic distribution is determined for each category.

16. (original) The system of claim 1, further comprising a subscriber characterization module for characterizing one or more subscribers.

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17. (original) The system of claim 16, wherein the subscriber characterization module comprises a subscriber demographics interface that permits entry of demographic and product preference data.

18. (previously presented) The system of claim 17, wherein the demographic and product preference data is entered manually by one or more sources.

19. (previously presented) The system of claim 17, wherein the demographic and product preference data is imported from a file.

20. (previously presented) The system of claim 17, wherein the demographic and product preference data is entered in a plurality of categories including household income, household size, median household age, and ethnic group.

21. (original) The system of claim 16, wherein the subscriber characterization module comprises a node demographics interface that permits the entry of data related to a node.

22. (original) The system of claim 21, wherein the node related data is entered manually by one or more sources.

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23. (original) The system of claim 21, wherein the node related data is imported from a file.

24. (original) The system of claim 21, wherein the node related data is entered into a plurality of categories including, household incomes, household size, median household age, and ethnic group.

25. (original) The system of claim 1, wherein the correlation module produces a demographic correlation.

26. (previously presented) The system of claim 1, wherein the correlation module correlates ad characterization information with avail opportunities information to produce an avail correlation.

27. (previously presented) The system of claim 26, wherein the avail correlation is produced by multiplying corresponding elements of the ad characterization information and the avail opportunities information, and summing the result.

28. (original) The system of claim 1, wherein the correlation module further generates an impact value based on the number of subscribers and an average correlation.

29. (original) The system of claim 1, wherein the correlation module is a secured system configured to protect subscriber privacy.

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30. (original) The system of claim 1, further comprising an avail sales/auctioning module for selling or auctioning the avails.

31. (previously presented) The system of claim 30, wherein the avail sales/auctioning module utilizes information from the avail opportunities module and the ad characterization module to sell the avails to one or more advertisers.

32. (previously presented) The system of claim 30, where the avail/sales auctioning module utilizes information from the correlation module to sell the avails to one or more advertisers.

33. (previously presented) The system of claim 30, wherein the avail sales/auctioning module further sets the prices of the avails based on information from the correlation module.

34. (original) The system of claim 30, wherein the avails are sold via the Internet.

35. (original) The system of claim 30, wherein the avails are auctioned to the highest bidder.

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36. (original) The system of claim 35, wherein the avails are auctioned via the Internet.

37. (original) The system of claim 35, wherein an acceptance is transmitted when a bid is accepted.

38. (original) The system of claim 1, further comprising a billing module for charging advertisers for the advertisements and for accepting payments from the advertisers.

39. (original) The system of claim 1, further comprising:

an ad manager for receiving one or more advertisements from one or more sources and for managing the ad insertion process;

a program stream source for transmitting one or more program streams; and

a multiplexer for multiplexing the program streams and the advertisements based on insertion instructions received from the ad manager.

40. (currently amended) An apparatus for inserting advertisements in video program streams, the apparatus comprising:

an ad manager for receiving one or more advertisements from one or more sources and for managing the ad insertion process;

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a program stream source for transmitting one or more program streams to subscribers, wherein the program streams include advertisements that are matched to one or more avails and the advertisements are inserted into the programs streams prior to transmitting the program streams to the subscribers; and

a multiplexer for multiplexing the program streams and the advertisements prior to transmission of the program streams to the subscribers based on insertion instructions received from the ad manager, wherein the bandwidths of the advertisements and the program streams are synchronized during the multiplexing.

41. (original) The apparatus of claim 40, wherein the ad manager is coupled directly or indirectly to one or more advertisement databases.

42. (original) The apparatus of claim 41, wherein the advertisement databases are local databases.

43. (original) The apparatus of claim 41, wherein the advertisement databases are network-based databases.

44. (original) The apparatus of claim 40, wherein the program stream source is configured to receive the program streams from a plurality of sources, and to forward the program streams to the multiplexer.

45. (original) The apparatus of claim 40, wherein the multiplexer receives the advertisements in a compressed form.



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46. (original) The apparatus of claim 40, wherein the multiplexer receives the advertisements in an analog form.

47. (original) The apparatus of claim 40, wherein the multiplexer multiplexes the program streams and the advertisements in real-time.

48. (original) The apparatus of claim 40, further comprising storage means for storing the advertisements until the insertion time.

49. (original) The apparatus of claim 40, further comprising a synchronization manager for generating a synchronization signal.

50. (original) The apparatus of claim 49, wherein the synchronization signal controls the timing of the ad insertion process.

51. (original) The apparatus of claim 40, wherein the advertisement insertion apparatus is deployed in a server-based technology.

52. (original) The apparatus of claim 40, wherein the advertisement insertion apparatus is deployed via software means.

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53 – 99. (cancelled)

100. (currently amended) The system ~~method~~ of claim ~~99~~39, wherein the advertisements are inserted into the program streams in a synchronized manner.

101. (currently amended) The system ~~method~~ of claim 100, wherein multiple program streams are interrupted simultaneously for the insertion of the advertisements.

102. (currently amended) The system ~~method~~ of claim 101, wherein the multiple program streams are interrupted based on a sync signal.

103. (currently amended) The system ~~method~~ of claim 100, wherein each advertisement inserted has an equal bandwidth, and before the insertion, each program stream is set to a bit rate appropriate for the advertisement.

104. (currently amended) The system ~~method~~ of claim 103, wherein the bandwidth of the program stream is adapted at the time of insertion.

105. (currently amended) The system ~~method~~ of claim 100, wherein the advertisements are compressed to a level identical to the program streams before the insertion.

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106. (currently amended) The system method of claim 9939, wherein the advertisements are inserted into the program streams in a plesiochronous manner.

107. (currently amended) The system method of claim 106, wherein the advertisements are inserted into a plurality of program streams within a predetermined time period.

108. (currently amended) The system method of claim 106, wherein each program stream has a bandwidth of similar size.

109. (currently amended) The system method of claim 106, wherein each program stream is changed to a constant bit rate before the actual insertion of the advertisements.

110. (currently amended) The system method of claim 106, wherein the advertisements are compressed to a bandwidth equal to a bandwidth of the program stream where the advertisements will be inserted.

111. (currently amended) The system method of claim 9939, wherein the advertisements are inserted in an asynchronous manner.

112 – 125. (cancelled)

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126. (currently amended) A method for selecting targeted advertisements to be delivered along with program streams to subscribers connected to a program content delivery system, the method comprising:

receiving the program streams;

receiving characteristics defining intended target markets for the advertisements;

receiving characteristics defining traits about the subscribers;

selecting ~~the~~ targeted advertisements that are applicable to the subscribers by correlating the subscriber traits and the intended target markets of the advertisements. prior to transmitting the program streams to the subscribers;

inserting the selected targeted advertisements into the program streams prior to transmitting the program streams to the subscribers, wherein the bandwidths of the selected advertisements and the program streams are synchronized during the insertion;  
and

transmitting the program streams ~~and~~ including the targeted advertisements to the subscribers.

127. (previously presented) The method of claim 126, wherein said inserting includes multiplexing the targeted advertisements and the program streams together in the same channel.

128. (previously presented) The method of claim 126, wherein said inserting includes statistically multiplexing a plurality of the targeted advertisements and a plurality of program streams together in the same channel.

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129. (previously presented) The method of claim 126, wherein said inserting includes inserting the targeted advertisements into the program streams synchronously.

130. (previously presented) The method of claim 126, wherein said inserting includes inserting the targeted advertisements into the program streams plesiochronously.

131. (previously presented) The method of claim 126, wherein said inserting includes inserting the targeted advertisements into the program streams asynchronously.

132. (previously presented) The method of claim 126, wherein said inserting includes inserting the targeted advertisements into the program streams at a constant bit rate.

133. (previously presented) The method of claim 126, wherein said inserting includes inserting the targeted advertisements into the program streams at an available bit rate.

134. (previously presented) The method of claim 126, wherein said transmitting includes transmitting the program streams with the targeted advertisements inserted therein to the subscribers.

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135. (previously presented) The method of claim 126, wherein said selecting includes selecting multiple targeted advertisements, wherein each targeted advertisement is applicable to a subset of the subscribers.

136. (previously presented) The method of claim 126, wherein the program content delivery system is a cable television headend.

137. (previously presented) The method of claim 136, wherein said selecting includes selecting multiple targeted advertisements, wherein each targeted advertisement is applicable to a group of subscribers.

138. (previously presented) The method of claim 137, wherein the group of subscribers are correlated to nodes of the cable television headend.

139. (previously presented) The method of claim 126, wherein the program content delivery system is a switch digital video network.

140. (previously presented) The method of claim 126, wherein said selecting includes selecting the targeted advertisement for an individual subscriber.

141 – 145. (cancelled)

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146. (new) A method of managing insertion of advertisements in a program stream, the method comprising:

- (a) recognizing one or more avails within the program stream;
- (b) creating an avail characterization for each of the one or more avails;
- (c) creating an ad characterization for each advertisement;
- (d) assigning at least one of the advertisements to each of the one or more avails prior to transmitting of the program stream to a subscriber, wherein the assigning is based partially on a correlation of the avail characterization and the ad characterization;
- (e) inserting the assigned advertisements into each of the one or more avails prior to transmission of the program stream to the subscriber, wherein the bandwidths of the advertisement and the program stream are synchronized during the insertion; and
- (f) transmitting the program stream to the subscriber, wherein the program stream includes the assigned advertisements inserted in step (e).

147. (new) The method of claim 146, further comprising maintaining the subscriber privacy.

148. (new) The method of claim 146, wherein the assigned advertisement and the program stream are statistically multiplexed in real time.

149. (new) The method of claim 146, wherein the assigned advertisements are stored in a storage means and is inserted in the program stream at a pre-determined time.

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150. (new) The method of claim 146, further comprising setting prices for the advertisements based on correlation results.

151. (new) The method of claim 146, wherein creating the avail characterization includes retrieving avail related data from one or more databases.

152. (new) The method of claim 146, wherein creating the avail characterization includes forming one or more avail characterization vectors based on one or more heuristic rules.

153. (new) The method of claim 146, wherein creating the avail characterization includes determining one or more characteristics of a subscriber.

154. (new) The method of claim 153, wherein the determining one or more characteristics of a subscriber include characterizing subscribers based on publicly available data.

155. (new) The method of claim 154, wherein the publicly available data includes real estate records and tax assessment records.



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156. (new) The method of claim 153, wherein the determining one or more characteristics of a subscriber include characterizing subscribers based on privately amassed data.

157. (new) The method of claim 156, wherein the private data includes specific viewing habits or purchase records of the subscriber.

158. (new) The method of claim 153, wherein the determining one or more characteristics of a subscriber include characterizing a group of subscribers.

159. (new) The method of claim 146, wherein creating the ad characterizations include receiving information about advertisements from one or more sources including advertisers.

160. (new) The method of claim 146, wherein creating the ad characterizations include characterizing advertisements in a plurality of categories including target market demographics, required ad bandwidth, and ad duration.

161. (new) The method of claim 146, wherein the assigning includes generating a demographic correlation by correlating the subscriber characteristics with the advertisement characteristics.

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162. (new) The method of claim 146, wherein the assigning includes correlating the advertisement characteristics with the avail characteristics to generate an avail correlation.
163. (new) The method of claim 146, further comprising selling the avails based on correlation results.
164. (new) The method of claim 163, wherein the avails are sold via an auction to the highest bidders.
165. (new) The method of claim 163, wherein the avails are sold via the Internet.
166. (new) The method of claim 146, wherein the subscriber is an individual.
167. (new) The method of claim 146, wherein the subscriber is a household.
168. (new) The method of claim 146, wherein the subscriber is a group of individuals.
169. (new) The method of claim 146, wherein the subscriber is a group of households.

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170. (new) The method of claim 146, further comprising inserting the selected advertisements in the program streams to generate one or more multiplexed program streams.

171. (new) The method of claim 170, wherein the advertisements are inserted into program streams in a synchronized manner.

172. (new) The method of claim 170, wherein multiple program streams are interrupted simultaneously for the insertion of the advertisements.

173. (new) The method of claim 172, wherein the multiple program streams are interrupted based on a sync signal.

174. (new) The method of claim 171, wherein each advertisement inserted has an equal bandwidth, and before the insertion, each program stream is set to a bit rate appropriate for the advertisement.

175. (new) The method of claim 174, wherein the bandwidth of the program stream is adapted at the time of insertion.

176. (new) The method of claim 171, wherein the advertisements are compressed to a level identical to the program streams before the insertion.

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177. (new) The method of claim 170, wherein the advertisements are inserted into the program in a plesiochronous manner.

178. (new) The method of claim 177, wherein the advertisements are inserted into a plurality of program streams within a predetermined time period.

179. (new) The method of claim 177, wherein each program stream has a bandwidth of similar size.

180. (new) The method of claim 177, wherein each program stream is changed to a constant bit rate before the actual insertion of the advertisements.

181. (new) The method of claim 177, wherein the advertisements are compressed to the bandwidth of the program stream where the advertisements will be inserted.

182. (new) The method of claim 170, wherein the advertisements are inserted in an asynchronous manner.

183. (new) The method of claim 170, wherein the advertisements are inserted in an asynchronous manner.

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184. (new) The method of claim 183, wherein the advertisements are inserted according to pre-determined parameters.

185. (new) The method of claim 184, wherein the pre-determined parameters are advertising opportunities selected by producers of the program streams.

186. (new) The method of claim 184, wherein the pre-determined parameters are advertising opportunities selected by cable operators.

187. (new) The method of claim 170, wherein the advertisements are dynamically linked to one or more program streams.

188. (new) The method of claim 187, wherein the advertisements are dynamically linked to the program streams by re-addressing one or more identifiers associated with the advertisements.

189. (new) The method of claim 187, wherein the dynamic linking occurs at the commencement of the advertisement.

190. (new) The method of claim 187, wherein the dynamic linking occurs after all the contents of the advertisement have been received.

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191. (new) The method of claim 170, wherein the advertisements are transported on a dedicated channel.

192. (new) The method of claim 191, wherein the dedicated channel is contained within the one or more multiplexed video streams.

193. (new) The method of claim 191, wherein the dedicated channel is located outside the one or more multiplexed video streams.

194. (new) The method of claim 191, wherein the advertisements are retrieved from the dedicated channel and are displayed to the viewer in real-time.

195. (new) The method of claim 191, wherein the dedicated channel is an in-band channel having the same frequency as the actual program stream.

196. (new) The method of claim 191, wherein the dedicated channel is an out-of-band channel having a different frequency than the actual program stream.

197. (new) The method of claim 196, wherein the actual program streams are transmitted in a first channel with a 1030 to 71030 MHz range, and the advertisements are transmitted in a second channel in the same frequency range.

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